

# Finding the Fluoride in You

**T**he researchers made phone call after phone call through long days and week-ends. Undaunted by hang-ups and answering machines, they soldiered on. In the end, no one could have predicted it would take 1,500 calls and more than 3 weeks to get the results they sought.

Three scientists, who are with the ARS Nutrient Data Laboratory in Beltsville, Maryland, ultimately found 144 residents from U.S. households nationwide who agreed to give them two tap water samples for the sake of science. The



project is part of an overarching collaboration among four organizations to build a fluoride database.

Nutritionist Pamela Pehrsson headed sampling, nutritionist Rena Cutrufelli headed beverage research, and analytical chemist Kristine Patterson headed quality control.

"The sample set had to be broad enough to be representative of the entire country and large enough to be statistically meaningful," says Pehrsson.

The team worked with researchers at the University of Iowa College of Dentistry to analyze the fluoride content of specific water, food, and beverage samples collected from across the country. The resulting analytical data was combined with other published and unpublished data to make up the National Fluoride Database, which was launched last month on the World Wide Web (see [www.nal.usda.gov/fnic/foodcomp](http://www.nal.usda.gov/fnic/foodcomp)). It provides critical data for nutrition-related research, planning, and policy.



"To ensure quality control, we used standard reference materials, which allowed us to gauge the accuracy of our research findings," says Patterson.

The resulting database will be added to a computer-based food-and-beverage-intake survey instrument now being developed by researchers at the University of Minnesota Nutrition Coordinating Center (NCC). The survey instrument will provide a valuable tool for assessing the amount of fluoride we consume from dietary and nondietary sources, including fluoride supplements and toothpastes.

For more than half a century, to prevent tooth decay, small amounts of fluoride have been added to drinking water supplies in various U.S. communities. That fluoride, as well as naturally occurring fluoride in some well and municipal water supplies, then finds its way into water-based beverages and foods.

"This is the first time there has been a systematic method of collecting water, food, and beverage samples from around the country to test and report validated fluoride values," says dental epidemiologist Robert H. Selwitz, with the National Institute of Dental and Craniofacial Research, which provided funds for the project. Before, scant data existed on the quantity of fluoride in the national food supply and, therefore, on our overall dietary fluoride consumption.

NCC's fluoride intake assessment instrument will be used to study the amount of fluoride folks consume from a variety of sources. Studies using the new database will help researchers learn whether consumers are meeting—or surpassing—the established adequate daily intake level of fluoride, which is 3 mg for women and 4 mg for men.

The project provides a solid foundation for future assessment studies geared to finding out how various consumption levels of fluoride affect dental caries (decay), bone health, and other diseases and conditions.—By **Rosalie Marion Bliss**, ARS.

*This research is part of Human Nutrition, an ARS National Program (#107) described on the World Wide Web at [www.nps.ars.usda.gov](http://www.nps.ars.usda.gov).*

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